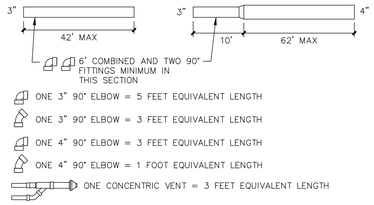
COMPUTING TOTAL COMBINED VENT LENGTH

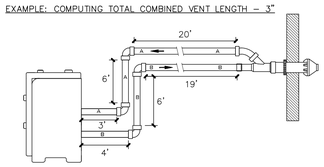
NOTES:

1. ALL MAXIMUM VENTING LENGTHS INCLUDE INTAKE PIPE, EXHAUST PIPE, AND FITTINGS ADDED TOGETHER. MINIMUM COMBINED OPERATION VENT LENGTH REQUIREMENT FOR ANY MUNCHKIN IS THE EQUIVALENT OF 6' OF PIPING AND TWO 90 ELBOWS ON INLET AND EXHAUST EACH WAY.
2. WHEN INCREASING VENT RUN FROM 3" TO 4", AVOID THE TRANSITION ON A HORIZONTAL RUN TO AVOID CONDENSATE BUILD UP. MAXIMUM ALLOWABLE FITTINGS IN FIRST 10 FEET OF PIPE RUN ON BOTH INTAKE AND EXHAUST FOR 3" SECTIONS IS ONE 90° OR TWO 45° FITTINGS BEFORE ANY INCREASE IN PIPE SIZE. NEVER USE DIFFERENT SIZES FOR INTAKE AND EXHAUST. THE VENT SYSTEM MUST BE BALANCED TO OPERATE PROPERLY.

MAXIMUM VENTING LENGTHS ONE WAY, ON EITHER INTAKE OR EXHAUST



EXAMPLE: COMPUTING TOTAL COMBINED VENT LENGTH – 3"



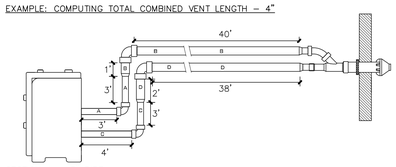
SECTION A
3'+6'+20'(3" PIPE) + 2X5'(TWO 90°ELBOWS) = 39 EQUIVALENT FEET TOTAL

SECTION B
4'+6'+19'(3" PIPE) + 2X5'(TWO 90°ELBOWS) = 39 EQUIVALENT FEET TOTAL

ONE 3" V1000 VENT KIT = 3 EQUIVALENT FEET TOTAL

TOTAL EQUIVALENT LENGTH = 81 EQUIVALENT FEET TOTAL

EXAMPLE: COMPUTING TOTAL COMBINED VENT LENGTH – 4"



SECTION A – 3" PIPE
3'+3' + 1X5'(90°ELBOW) = 11 EQUIVALENT FEET TOTAL

SECTION B – 4" PIPE
1'+40' + 1X3'(90°ELBOW) = 44 EQUIVALENT FEET TOTAL

SECTION C – 3" PIPE
4'+3' + 1X5'(90°ELBOW) = 12 EQUIVALENT FEET TOTAL

SECTION D – 4" PIPE
2'+38' + 1X3'(90°ELBOW) = 43 EQUIVALENT FEET TOTAL

ONE 3" V1000 VENT KIT = 3 EQUIVALENT FEET TOTAL

TOTAL EQUIVALENT LENGTH = 93 EQUIVALENT FEET TOTAL

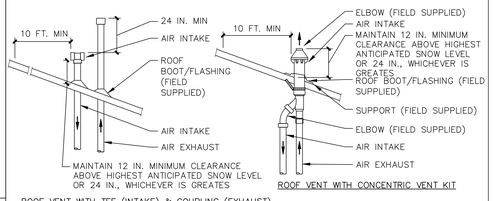
VENT TERMINATION

802.8 Through-the-Wall Vent Terminination.

802.81 A mechanical draft venting system shall terminate at least three (3) feet (.09 m) above any forced air inlet located within ten (10) feet (3.1 m).

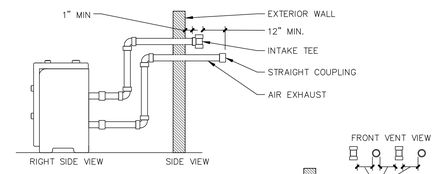
Exception: This provision shall not apply to the combustion-air intake of a direct-vent appliance.

802.83 The vent terminal of a direct-vent appliance with an input of 10,000 Btu/h (3 kw) or less shall be located at least six (6) inches (150 mm) from any air opening into a building, and such an appliance with an input over 10,000 Btu/hr (3kw) but not over 50,000 Btu/h (14.7 kw) shall be installed with nine (9) inches (230 mm) vent termination clearance, and an appliance with an input over 50,000 Btu/hr (14.7 kw) shall have at least twelve (12) inches (300 mm) vent termination clearance. The bottom of the vent terminal and the air intake shall be located at least twelve (12) inches (300 mm) above grade.

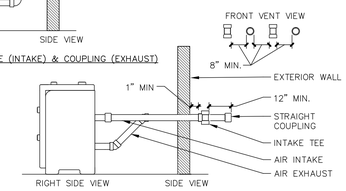


ROOF VENT WITH TEE (INTAKE) & COUPLING (EXHAUST)

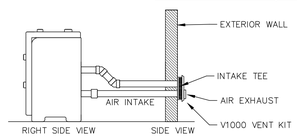
ROOF VENT WITH CONCENTRIC VENT KIT



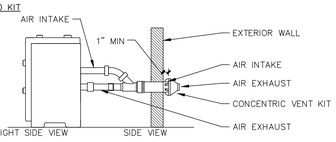
SIDEWALL VENT WITH TEE (INTAKE) & COUPLING (EXHAUST)



SIDEWALL VENT WITH TEE (INTAKE) & COUPLING (EXHAUST)

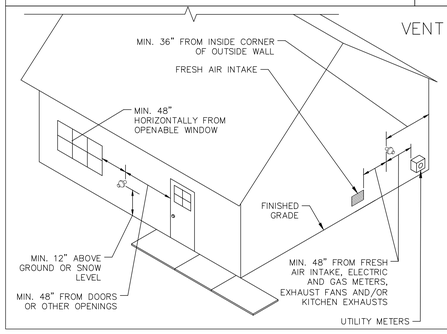


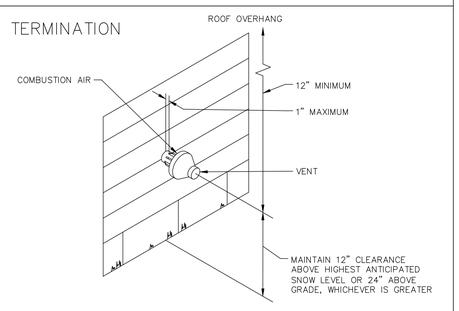
SIDEWALL VENT WITH V1000 KIT



SIDEWALL VENT WITH CONCENTRIC VENT KIT

VENT TERMINATION





MUNCHKIN NOTES

GENERAL NOTE

This sheet is provided as a venting guideline supplement only, to the installation methods of the Munchkin product and does not constitute a complete installation guide. Please refer to the "installing, operating and maintaining munchkin high efficiency heater" manual for complete installation guidelines.

LOCATION

Choose a location for your water heater centralized to the piping system, along with consideration to vent pipe length. As the length of vent pipe increases the firing rate of the appliance decreases. You must also locate the Munchkin. Additionally, you will need to place the water heater so that the controls, inlet/outlet, and gas valves are easily accessed. This appliance must not be installed outdoors, as it is certified as an indoor appliance, and must be kept vertical and on a level surface. Also care must be exercised when choosing the location of this appliance, where leakage from the relief valve, leakage from related piping, or leakage from the tank or connections, will not result in damage to the surrounding areas, or to the lower floors to the building. A water heater should always be located in an area with a floor drain or installed in a drain pan suitable for water heaters. Under no circumstances, shall Monterey Energy Group Inc. be held liable for any such water damage whatsoever.

INSTALLATION REQUIREMENTS

1. Unit must be installed indoors where it will not be exposed to freezing temperatures, along with consideration for electrical, gas connection and venting.
2. Support pipe runs per local codes.
3. 0" clearance on top, sides, bottom and back. 4" work access on front
4. 1-1/4" water connections. Provide pressure relief valve and condensate removal.
5. 120 VAC, 60 Hz, 10 amps electrical connection per manual. #14 AWG with maximum 15 amp breaker. Appliance must be grounded. Check polarity with green LED on main board. A dedicated line on a breaker is strongly recommended.

GAS SUPPLY

1. Verify correct type of gas input on the rating plate.
2. Gas supply shall be minimum 7" w.c. and maximum 14" w.c.,
3. Provide minimum ¾" diameter gas supply size.
4. Provide fabricated drip leg.
5. Do not use flex tubing on gas lines.

VENTING

A. Approved Venting Materials:

Exhaust Vent in Plastic 3" Pipe Schedule 40 or 80.
1. Non Foam Core PVC Pipe
2. Non Foam Core CPVC Pipe
3. Non Foam Core ABS Pipe

Extending Exhaust Vent in Plastic 4" Pipe Schedule 40 or 80.
1. Non Foam Core PVC Pipe
2. Non Foam Core CPVC Pipe
3. Non Foam Core ABS Pipe

Vent Piping must conform to following:
1. **PVC** Non Foam Core Pipe (Polyvinyl Chloride) to ASTM D-1784 Class 12454-B, Formerly designated Type 1, Grade 1
2. **CPVC** (Chlorinated Polyvinyl Chloride) Class 23447-B, Formerly designated Type IV, Grade 1 conforming to ASTM D-1784
3. **ABS** (Acrylonitrile0Butadiende-Styrene) Class 3-2-2-2-2 conforming to ASTM D3965

B. Venting the Munchkin in 3" Plastic Pipe:
1. For inlet air supply, top pipe on the back of the cabinet, use 3" PVC schedule 40. It is very important that you plan the location properly, to eliminate long pipe runs and excessive fittings. Inlet pipe size must not be reduced. Do not combine the inlet air with any other inlet pipe including an inlet to an additional similar appliance. The joints must be properly cleaned, primed, and cemented. The piping must also be properly supported as per local and national standard plumbing codes. It is important that the piping must be clean and free from burs, debris, ragged ends, and particles of PVC.
2. For concrete construction or to meet certain fire codes, exhaust and inlet piping at the wall penetration must be CPVC schedule 40 or 80, (only to meet local fire codes). The balance from the penetrated wall may be PVC schedule 40 or 80
3. Use the same material as used for exhaust in either 3" or 4" Plastic Pipe. Cellular Foam Core Pipe may be used for the inlet only. **Never On Exhaust Piping!**
4. Exhaust piping should be sloped back to the connection on the munchkin, at least ¼" per foot to remove additional condensate that forms within the pipe. The total combined length of pipe (intake piping plus exhaust piping added together) including elbow allowances intake and exhaust (each elbow=5' of pipe) should not exceed 85'. The combined vent length should not be less than a combined length of 6' plus two 90-degree elbows. Choose your vent termination locations carefully. You must additionally make certain that exhaust gas does not re-circulate back into the intake pipe. You must place them in a open area, and follow the following guidelines:

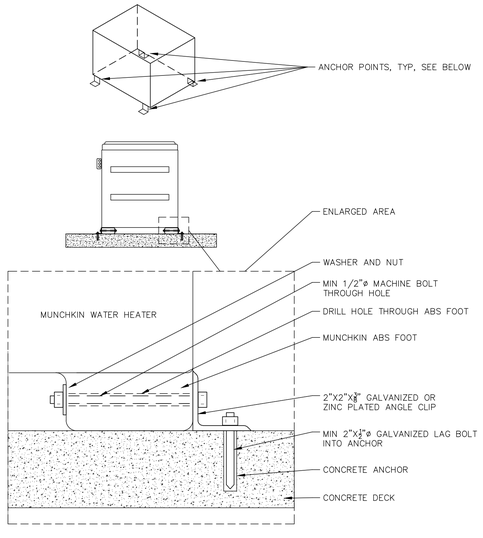
- All combustion (intake) air must be taken from the outside of building and all exhaust gases must be vented to the outside of building.
- Do not combine with other appliances.
- Never vent into a walkway or patio area, or an alley, or otherwise public area less than 7' from the ground.
- Never vent over or under a window or over a doorway where the exhaust plume or condensation liquid will cause obtrusive or dangerous conditions. (Or refer to National Fuel Gas Code, CAN B149)
- Never install a heat saver or similar product to capture waste heat from exhaust;
- Always have vent location at least 1' above maximum snow level;
- Always have vent 1' above ground level, away from shrubs and bushes;
- Follow local gas codes in your region or refer to National Fuel Gas Code, or Can B149
- Always have vent at least 3' from an inside corner of outside walls;
- Maintain at least 4' clearance to electric, gas meters, and exhaust fans or kitchen exhausts;
- Very Important! Inlet air must be taken from outside of building, next to exhaust outlet, no closer than 8" and no farther than 36".
- Always place screens in all openings in intake and exhaust to prevent foreign matter from entering the Munchkin.
- The vent intake and exhaust must be properly cleaned and glued, for pressure tight joints. See diagrams on this sheet as a guideline and refer to the installation manual: certain site conditions such as multiple roof lines/pitches may require venting modifications-consult factory. The air inlet must be a minimum of 12" vertically above the maximum snow level or 24" which ever is greater. **All venting must be properly supported, as the Munchkin is not intended to support any venting whatsoever.** All piping, glue, solvents, cleaners, fittings, and components, must conform to ASTM (American Society for Testing and Materials), and ANSI (American National Standard Institute). It is recommended that you use one of the mentioned vent kits specifically for Munchkin installations; either KGAVT061CVT (3 in.) or V1000. Note: When using the KGAVT601CVT remove the 2 screens from the provided inlet tee and install them in the inlet socket and outlet socket (Y tee connections) of the kit prior to installing the schedule 40 pipe and gluing.

Longer Vent Using a Combination 3" to 4" Pipe:
1. The connection of air inlet and exhaust vent at the boiler must remain 3" and each vent must extend from the boiler a minimum of 15 equivalent feet before transitioning to a 4" vent.
2. The overall extended maximum length of pipe on the inlet exhaust combined, must not exceed 125 equivalent feet.

CLEANER/ CEMENT

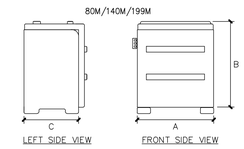
Cement for all venting must be ALL PURPOSE Cement, and must conform to ASTM D-2564 and F-493, and cleaner for the piping and fittings must conform to ASTM F-656. For joining ABS to PVC, You must use transition green cement listed by NSF and IAPMO and exceeds ASTM D-3138 to make solid liquid tight joints and gas tight joints.

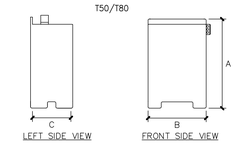
SEISMIC ANCHORING

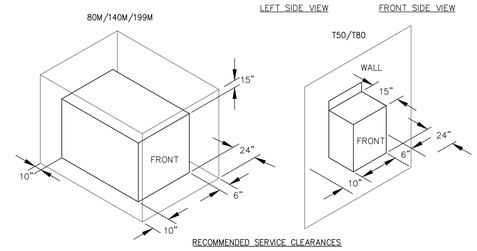


DIMENSIONS AND SERVICE CLEARANCE

MUNCHKIN DIMENSIONS (IN.)					
	MODEL				
MARK	80M	140M	199M	T50	T80
A	18.25	18.25	18.25	26.38	26.38
B	25.88	25.88	25.88	17.50	17.50
C	14.75	24.50	24.50	12.88	12.88







RECOMMENDED SERVICE CLEARANCES

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TOMLIN RESIDENCE
19 LA RANCHERIA
CARMEL VALLEY, CA. 93924

HEAT SOURCE VENTING

REVISIONS:	BY:

DATE: 01/13/2014
SCALE: AS NOTED
DRAWN: MEG
CHECKED:
CHECKED:
FILE NAME:
SHEET: M6.4
SHEET OF SHEETS

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